

ABSTRACT

P450 OXYGENASES AND METHODS OF USE

This disclosure provides the nucleic acid and protein sequences of novel P450 oxygenases that utilize, at least, taxoid substrates, including taxadiene isomers. The disclosed oxygenases, such as a taxoid 5 α -hydroxylase, hydroxylate, at least, the C5 position of a taxoid. Also provided are methods of introducing oxygen at the C5 position of a taxoid and methods of producing the anti-cancer drug, paclitaxel (also known as TaxolTM), and other taxoids, such as paclitaxel intermediates.